

# NASA TECH BRIEF

## *Marshall Space Flight Center*



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### Graphite and Boron-Reinforced Composite Materials Data Summary

A data summary file has been assembled consisting of currently available, comprehensive information concerning graphite and boron-reinforced composite materials. The data summary is not intended to be a detailed design guide, but rather, a collection of information on typical processing techniques, mechanical properties, and physical properties of the advanced composite materials, which are being considered for structural applications on advanced space vehicles.

Information in the form of tables and graphs is provided covering shear modulus, shear strength, flexure modulus, flexure strength, stress-strain data, compressive modulus, compressive strength, interlaminar shear strength, linear thermal expansion, longitudinal and transverse tension strength, specific heat, thermogravimetric and differential thermal analysis, time-temperature-viscosity relationships, electrical resistivity, and hoop data. The effects of room temperature and elevated temperature aging or post cure are shown. Available data on many commercially available composite materials are included.

These composite materials were developed primarily

to fill aerospace industry needs, providing good strength at elevated temperatures with high stiffness and low weight. However, they will have many uses in other fields where their unique properties can be utilized, such as prosthetics and rehabilitation equipment, and marine masts, booms, and spars, etc.

#### Note:

Requests for further information may be directed to:  
Technology Utilization Officer  
Marshall Space Flight Center  
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Reference: B72-10294

#### Patent status:

No patent action is contemplated by NASA.

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